Presenting a Model of Self-handicapping Based on Time Perspective and Intelligence Beliefs mediated by Academic Self-efficacy in Students

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Abstract

Purpose: This research was conducted with the aim of presenting a model of self-handicapping based on time perspective and intelligence beliefs mediated by academic self-efficacy in students.

Methodology: Present study was cross-sectional from type of correlation. The research population was all secondary high school students of Tehran city in 2019-20 academic years. The sample size was considered 400 people who were selected by multi-stage cluster sampling method. The research tools were the revised self-handicapping scale (Jones & Rhodewalt, 1982), time perspective questionnaire (Zimbardo & Boyd, 1992), intelligence beliefs scale (Abd-El-Fattah & Yates, 2006) and academic self-efficacy scale (Jinks & Morgan, 1999). Data were analyzed by structural equation modeling method in SPSS-25 and Amos-23 software.

Findings: The findings showed that the model of self-handicapping based on time perspective and intelligence beliefs mediated by academic self-efficacy in students had a good fit. Also, time perspective and intelligence beliefs had a direct and positive effect on academic self-efficacy and time perspective, intelligence beliefs and academic self-efficacy had a direct and negative effect on self-handicapping. In addition, time perspective and intelligence beliefs with mediated by academic self-efficacy had an indirect and negative effect on self-handicapping (P<0.05).

Conclusion: According to the results of this study, planning is necessary to reduce students' self-disability which for this purpose, school counselors and psychologists can improve their time perspective, intelligence beliefs and academic self-efficacy through workshops.

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1. Introduction

Self-empowerment is a behavior or choice of actions to protect a person's self-concept against the negative consequences of failure, which provides a good opportunity for people to attribute failure to external factors and success to internal factors (Yu & McLellan, 2019). In other words, self-empowerment means planning for the obstacles to successful performance that one creates to maintain one's value and self-concept (Yildirim & Demir, 2020). Behavioral self-disability has two parts: behavioral and verbal. Behavioral self-disability means creating real obstacles or real obstacles on the way to success, which reduces the probability of success, and verbal self-disability means verbal expressions due to physical weaknesses or psychological problems and stresses. Evaluations identify barriers that justify their possible future failure (Eyink & et al, 2017). When a person realizes that if he / she performs well, he / she will be approved and accepted by others, he / she uses the self-empowerment defense mechanism to maintain his / her self-concept and value, and another reason for choosing it is lack of confidence in his / her ability and skills to perform activities (Ferradas & et al, 2017). Self-disability is one of the problematic forms of behavior that can have negative and destructive consequences and is often associated with negative attitudes, emotions and behaviors (Adil & et al, 2020).

One of the factors related to self-disability is the perspective of time (Golestaneh & et al, 2016). which is defined as a person's belief and perspective on the past, present and psychological future of a time (Dreves & Blackhart, 2019). The perspective of time puts the cognitive processes of people's experiences in the context of the past, present, and future. Accordingly, the perspective of time consists of five factors: negative past (pessimism about the past), positive past (optimism about the past), and hedonistic (enjoying Current experiences, destiny (surrender to destiny) and positive foresight (planning to achieve long-term goals) are formed (Ronnlund & Carelli, 2018). Perspective is a perspective in which a person's scores are positive in the past positive, hedonistic and positive futuristic high, and negative in the past and fateful low (Burns & et al, 2021), which reduces attention bias in shaping positive perceptions and expectations. Providing appropriate interpretations, achieving desirable goals, a sense of control and appropriate motivation play an essential role (Konowalczyk & et al, 2019).

Another factor associated with self-disability is intelligence beliefs (Nikdel & Kohestani, 2017), which refer to an individual's beliefs about his or her own intelligence and ability to predict the behavior of others and direct their own behavior (Flanigan & et al, 2017). IQ beliefs as motivational constructs and a subset of attributions reflect a person's motivation to achieve high-level success (Makel & et al, 2015). In general, there are two types of innate and incremental intelligence beliefs that in the belief of innate intelligence people believe that human psychological traits and characteristics, including intelligence is constant and does not increase, and in increasing intelligence believe that people believe that human psychological traits and characteristics including intelligence can be Change is dynamic and flexible (Jones & et al, 2013). People with incremental IQs, unlike people with innate IQ beliefs, work harder to achieve academic and non-academic achievement, use more appropriate or adaptive coping strategies, seek to improve their competencies and abilities, use less self-empowerment strategies, and fail. They see an opportunity for growth and development (Tan & et al, 2018).

One of the variables that can mediate between time perspective and intelligence beliefs with self-disability is academic self-efficacy, which refers to a person's beliefs about his / her abilities and abilities in performing academic activities and practices according to a certain criterion (Bergey & et al, 2019). In other words, this structure refers to a person's beliefs about studying, doing research activities, asking questions in class, successful communication with the teacher, establishing intimate relationships with classmates, having good academic performance, and participating in class discussions (Zhen & et al., 2017). People with high academic self-efficacy usually have better academic performance, choose challenging goals, have lower anxiety and depression, are confident in their ability to succeed, and are more successful in academic activities (Bulfone & et al., 2020).

Little research has been done on time relationship relationships, IQ beliefs, academic self-efficacy, and self-disability. For example, the results of Taylor & Wilson (2019) showed that understanding time played an effective role in increasing self-efficacy. In another study, Zambianchi (2018) reported that time perspective had a positive and significant relationship with self-efficacy. Omidian et al (2015) in a study concluded that time perspective had a significant effect on self-efficacy and academic procrastination. In another study, Haghighi et al. (2018) reported that the outlook for the future had a significant effect on increasing academic achievement motivation and self-efficacy. Golestaneh et al (2016) in a study concluded that time perspective had a significant negative effect on academic procrastination. Also, the results of Purbaghban et al. (2013) showed that beliefs of intelligence and academic self-efficacy had a significant positive relationship. In another study, Snyder et al (2014) reported that implicit beliefs about elite had a significant positive relationship with academic self-efficacy. Atashafrouz (2018) while researching concluded that IQ beliefs had a direct effect on students' self-efficacy. In another study, Hajiyakhchali et al (2014) reported that IQ beliefs were significantly associated with students' academic self-efficacy. Nikdel & Kohestani (2017) while researching concluded that IQ beliefs had a direct and negative effect on academic self-disability. In addition, the results of Atoum et al (2020) showed that self-efficacy and self-disability had a significant negative relationship. In another study, Mehdizadeh et al (2018) reported that academic self-efficacy had a significant negative relationship with self-disability and academic procrastination. Zabihollahi et al (2012) in a study concluded that academic self-efficacy had a negative and significant relationship with students' self-disability.

The study of students' self-disability is extremely important due to the negative role of this structure on other academic and even non-academic functions. Because this structure is positively related to poor academic performance such as low academic achievement, low academic achievement motivation, low academic self-esteem, low academic self-efficacy, low academic vitality, etc. and reduces academic performance. Another important point is that based on the studies conducted in the present study, previous studies, although they examined the relationship between academic self-efficacy and self-disability, but less examined the causal relationship between them, and more importantly, researchers conducted a study they did not find themselves empowered. Therefore, research gaps are felt in this field and there is no doubt that more research is needed to reduce the variables affecting academic self-disability. As a result, this study aimed to provide a model of self-empowerment based on time perspective and intelligence beliefs mediated by academic self-efficacy in students.

2. Methodology

The present study was a cross-sectional correlational study. The study population was all second year high school students in Tehran in the academic year 2019-20. According to Kline (2011), the sample size in the correlation research method is obtained through the formula (Q5 / 2 <n <Q5) in which n is the sample size and Q is the total number of items of all instruments. Due to the existence of four instruments and 135 items, the minimum sample size was estimated to be 337.5 people. In this study, to ensure the sample size, its size was considered to be 400 people and this number was selected by multi-stage cluster sampling method. In this sampling method, first the city of Tehran is divided into four parts north, east, west and south and two parts are randomly selected and then from each part the number of secondary schools is randomly selected and from each school three classes in different grades (tenth, Eleventh and twelfth) were randomly selected as a sample. The research was conducted in such a way that after coordination with the officials of Tehran Education Department and stating the purpose, importance and necessity of the research for them, sampling was performed and then for the samples and their school principals and deputies, the importance and necessity of the research was stated and observed. Ethical points were reassured and agreed to conduct research, and they were finally asked to carefully study and

respond to the following tools. It should be noted that they were told that there is no right or wrong answer and the best answer is the one that reflects their true situation.

Revised Self-Empowerment Scale: This scale was designed by Jones & Rhodewalt (1982) with 25 items, which are scored using a six-point Likert scale from zero (strongly disagree) to five (strongly agree). The instrument score is calculated with the total score of the items, so the range of scores is between 0 and 125, and a higher score indicates more self-disability. They confirmed the construct validity of the instrument by factor analysis and its reliability by Cronbach's alpha method of 0.79. In Iran, Nikdel & Kohestani (2017) reported the reliability of the instrument by Cronbach's alpha method of 0.65. In the present study, the reliability value was 0.85 by Cronbach's alpha method. Time Vision Questionnaire: This questionnaire was designed by Zimbardo & Boyd (1992) with 66 items and five dimensions of negative past, positive past, hedonistic present, and destiny present and positive futurism. It scores up to five (very correct). The tool score is calculated with the total score of the items, so the score range is between 66 and 330, and the higher the score, the better the time perspective. They confirmed the construct validity of the instrument by factor analysis and its reliability by Cronbach's alpha of 0.87. In Iran, Golestaneh, et al (2016) confirmed the validity of the instrument structure by factor analysis and reported the reliability of the components in the range of 0.56 to 0.67. In another study, Farzin, et al (2020) reported total instrument reliability using the Cronbach's alpha method of 0.78. In the present study, the reliability value was obtained by Cronbach's alpha method for dimensions in the range of 0.67 to 0.84 and for the whole 0.80.

IQ Beliefs Scale: This scale was designed by Abd-El-Fattah & Yates (2006) with 14 items and two dimensions of intrinsic and incremental IQ beliefs.) Is scored. The instrument score is calculated with the total score of the items, so the range of scores is between 14 and 70, and a higher score indicates more IQ beliefs. They confirmed the construct validity of the instrument by factor analysis and its reliability by Cronbach's alpha of 0.78. In Iran, Ghanbaritalab, et al (2018) confirmed the validity of the questionnaire by correlating each item with the total score of the instrument, whose values ranged from 0.44 to 0.67 and its reliability by Cronbach's alpha method for both intrinsic and incremental dimensions. They reported 0.58 and 0.71, respectively. In the present study, the reliability values were obtained by Cronbach's alpha method for both intrinsic and incremental dimensions of 0.73 and 0.76, respectively.

Academic Self-Efficacy Scale: This scale was designed by Jinks & Morgan (1999) with 30 items, which are scored using a four-point Likert scale from one (strongly disagree) to four (strongly agree). The instrument score is calculated with the total score of the items, so the range of scores is between 30 and 120, and a higher score indicates greater academic self-efficacy. They confirmed the construct validity of the instrument by factor analysis and its reliability by Cronbach's alpha of 0.82. In Iran, Foroutanbagha, et al (2015) confirmed the validity of instrument structure by factor analysis method and its reliability by Cronbach's alpha method of 0.76. In the present study, the reliability value was 0.80 by Cronbach's alpha method. Data were analyzed using Pearson correlation coefficients and structural equation modeling in SPSS-25 and Amos-23 software.

3. Findings

The participants were 400 sophomores; So that in this study, 235 girls (58.75%) and 165 boys (41.25%) were present and 102 people in the tenth grade (25.5%), 166 people in the eleventh grade (41.5%) And 132 people were studying in the twelfth grade (33%). Table 1 presents the mean, standard deviation, skewness and elongation of time perspective variables, IQ beliefs, academic self-efficacy and self-disability in students.

Table1. Mean standard deviation, skewness and elongation of research variables in students

Variables	Average	Standard deviation	skewness	Elongation
Negative past	34/59	11/41	-0/47	-0/65
Positive past	36/35	9/26	-0/53	-0/21
Now hedonistic	29/35	9/02	-0/14	-0/58
Destiny-oriented	22/84	8/28	0/23	-0/73
Positive foresight	34/30	9/53	-0/24	-0/51
Time Vision	157/43	21/68	-0/65	-0/95
Belief in innate intelligence	21/48	3/33	-0/08	-0/43
Incremental intelligence belief	27/92	4/56	-0/25	-0/51
Belief in intelligence	49/40	6/43	-0/35	-0/69
Academic self-efficacy	88/94	14/97	-0/63	-0/23
Self-empowerment	67/55	13/14	-0/40	0/27

According to the results of Table 1, the assumption of normality of all variables based on skew and elongation values was confirmed due to the fact that all values are in the range of +1 to -1. Another assumption for modeling structural equations is the existence of correlations between variables. Therefore, Table 2 presented the correlation coefficients of the variables of time perspective, IQ beliefs, academic self-efficacy and self-disability in students.

Table2. Correlation coefficient of research variables in students

Variables	Time Vision	IQ Beliefs	Academic self-efficacy	Self-disability
Time Vision	1			
IQ Beliefs	0/37**	1		
Academic self-efficacy	0/68**	0/49**	1	
Self-disability	-0/85**	-0/34**	-0/62*	1

**P<0/01

According to the results of Table 2, time perspective, IQ beliefs and academic self-efficacy have a positive and significant relationship and time perspective, IQ beliefs and academic self-efficacy have a negative and significant relationship with disability (P <0.01). Therefore, there is a hypothesis of sufficient correlation between research variables to model structural equations, in addition to the assumption of normality. Table 3 presents the fitness indicators of the self-disability model based on time perspective and IQ beliefs mediated by academic self-efficacy in students.

Table3. Fitness indices of the self-disability model based on time perspective and IQ beliefs mediated by academic self-efficacy in students

Indicators	$\chi 2/df$	RMSEA	CFI	NFI	GFI
Statistics	1/91	0/06	0/96	0/94	0/96
Acceptance limit	Less than 3	Less than 0.10	Above 0.90	Above 0.90	Above 0.90

According to the results of Table 3, self-disability based on time perspective and IQ beliefs mediated by academic self-efficacy in students has a good fit. Figure 1 presented the fitted model of academic self-disability in students with standard coefficients of paths and in Table 4 the results of direct and indirect effects on students were presented.
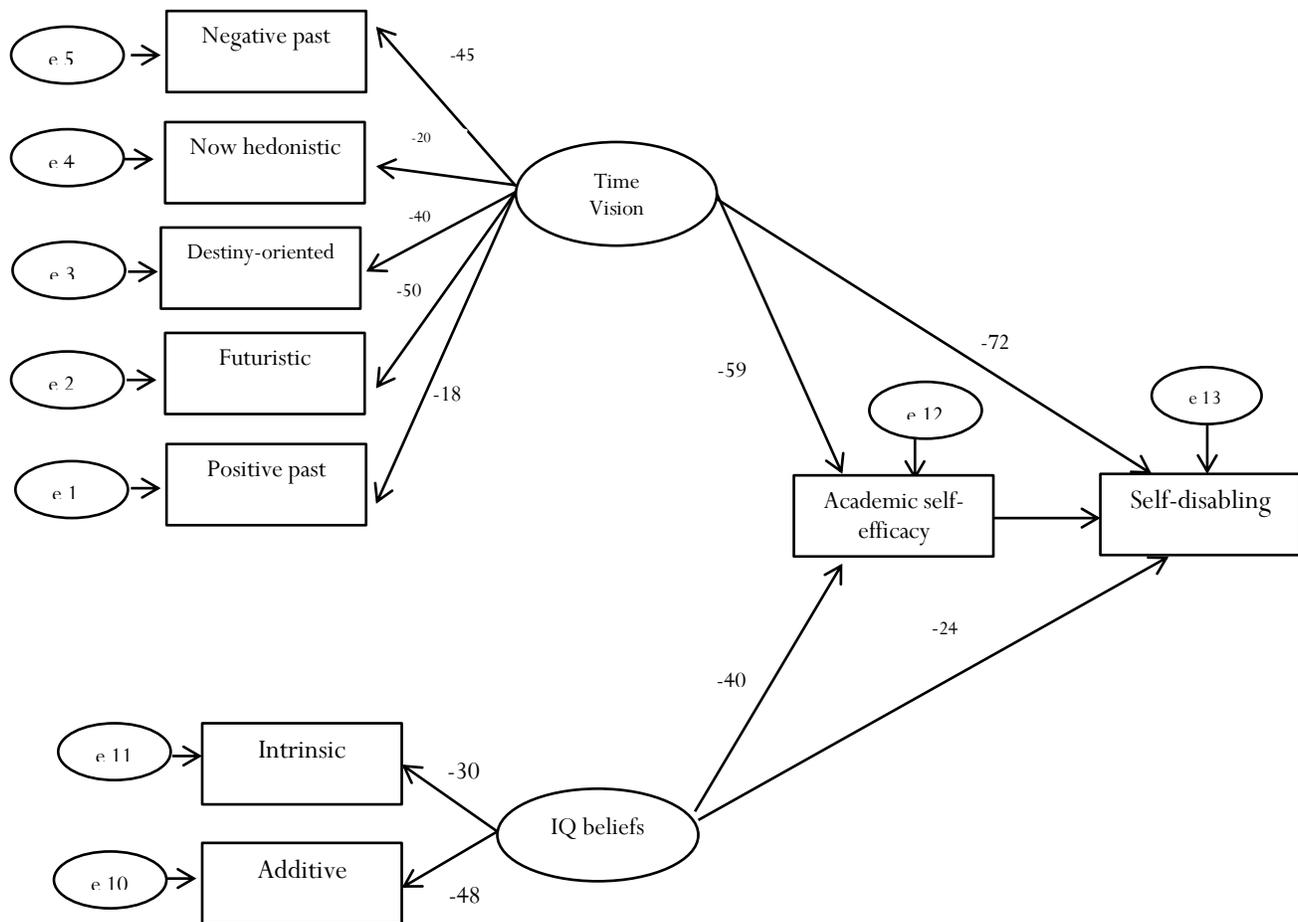
Figure1. Fitted model of academic self-disability in students with standard path coefficients

Table4. Results of direct and indirect effects on students

Research Hypotheses	Standard coefficients	Amara t	Significance level
The direct effect of time perspective on self-efficacy	0/59	3/70	0/001
The direct effect of IQ beliefs on academic self-efficacy	0/40	3/15	0/001
The direct effect of time perspective on self-disability	-0/72	-4/17	0/001
The direct effect of intelligence beliefs on self-empowerment	-0/24	-2/37	0/002
The direct effect of academic self-efficacy on self-disability	-0/52	-3/28	0/001
Indirect effect of time perspective on self-empowerment mediated by academic self-efficacy	-0/31	3/01	0/001
Indirect Effect of IQ Beliefs on Self-Empowerment Mediated by Academic Self-Efficacy	-0/20	-2/27	0/001

According to the results of Table 4, time perspective and IQ beliefs have a direct and positive effect on academic self-efficacy (P< 0/01)

4. Discussion

Considering the role of self-disability in the decline of students' academic performance and success, this study was conducted to provide a model of self-disability based on time perspective and intelligence beliefs mediated by academic self-efficacy in students. The results showed that time perspective had a direct and positive effect on academic self-efficacy and direct and negative effect on self-disability. This result in terms

of time perspective effect on academic self-efficacy with the results of Taylor & Wilson (2019), Zambianchi (2018), Haghighi, et al (2018) and Omidian, et al (2015) and in terms of the effect of time perspective on disability were in line with the results of research by Golestaneh, et al (2016) and Omidian, et al (2015). Explaining these results based on the research of Golestaneh, et al (2016) can be said that time perspective is an essential dimension of the psychological structure of time that appears as a categorization of human cognitive processes experience in the context of past, present and future. This attitude often has an unconscious process by which the continuous flow of personal and social experiences is linked to time categories and gives them coherence and meaning. Another important point, according to Zimbardo & Boyd (1992) theory, is that the time perspective has five dimensions: negative past perspectives, positive past, hedonistic present, destiny present and positive futurism. Negative past is characterized by a pessimism, regret and rumination about the past and a negative attitude towards it. A positive past indicates a positive emotional attitude towards the past, a hedonistic present with a certain risk and pleasure, and these people live in the present moment and seek to gain. Experiences are pleasurable and avoidance of unhappiness, while the deterministic present reflects the acceptance of judgment and value and foresight indicates a general orientation towards the future that is often associated with purposeful behaviors. As a result, the combination of these perspectives can positively or negatively affect academic or psychological characteristics such as academic self-efficacy and self-disability. Therefore, time perspective can have a significant positive effect on self-efficacy and a significant negative effect on self-disability.

Also, the results showed that IQ beliefs had a direct and positive effect on academic self-efficacy and a direct and negative effect on self-disability. This result in the field of the effect of IQ beliefs on academic self-efficacy with Atashafrouz (2018), Snyder, et al (2014), Hajiyakhchali, et al (2014) and Purbaghban, et al (2013) and in the field of the effect of intelligence beliefs on self-disability were in line with the results of Nikdel & Kohestani (2017). Explaining these results based on the research of Purbaghban, et al (2013), it can be said that people with innate IQ, unlike people with incremental IQ, consider effort as a sign of inability and therefore seek tasks that succeed with minimal effort. In contrast, people with incremental IQ beliefs, unlike people with innate IQ beliefs, are optimistic about the growth and development of their IQ abilities, and this belief motivates them to face new and challenging tasks. Thus, those who believe in incremental intelligence theory focus more on progress-based metrics and compare themselves less with others to achieve success and good performance. Therefore, both intelligence beliefs (intrinsic and incremental) can have a positive or negative effect on various characteristics, so general intelligence, which is calculated by reversing the innate intelligence score, can increase students 'academic self-efficacy and decrease students' disability.

In addition, the results showed that academic self-efficacy had a direct and negative effect on self-disability, which was consistent with the results of Atoum, et al (2020), Mehdizadeh, et al (2018) and Zabihollahi, et al (2012). Explaining these results based on the research of Atoum, et al (2020), it can be said that people with high academic self-efficacy increase their chances of success before performing academic activities and practices. Hence, they do not see the need for self-protection, which is one of the two important functions of self-empowerment. This is because a person engages in self-disabling when he or she is likely to fail and wants to prevent damage to his or her self-concept with an inhibitory document unrelated to the ability (such as insufficient effort) to fail. Another important point based on Bandura (2011) theory is that self-efficacy affects a person's behavior through four processes: cognitive, emotional, motivational and selective.

. Cognitively, a self-sufficient person perceives a difficult task as a challenge to be mastered, not a harm to be avoided. Thus, students with high academic self-efficacy perceive less difficult homework for their self-esteem and less self-disability. Emotionally, people with high self-efficacy are less likely to feel stressed, depressed, and anxious in traumatic situations. Thus, higher academic self-efficacy reduces the predictability of emotional trauma after possible failure and reduces the motivation for self-disability. In terms of

motivation, a person with high academic self-efficacy puts more effort and persistence, which reduces the likelihood of failure and self-disability. Selectively, the student with higher academic self-efficacy tries to select situations for performance that are more likely to be successful for him or her, which reduces his or her need for self-disability. As a result, according to the explanations of academic self-efficacy can have a negative and significant effect on self-disability in students?

Other results showed that time perspective and IQ beliefs mediated by academic self-efficacy had an indirect and negative effect on self-disability. No research has been found in this field, but in explaining these results it can be said that the effect of time perspective and IQ beliefs on self-disability is mediated by cognitive and motivational mechanisms. One of the most important cognitive mechanisms affecting self-disability is belief in efficiency, talents and abilities. Etc. And the most important motivational mechanisms affecting self-disability can be motivation for success, low anxiety, fear of failure, motivation for progress, interest in education and so on. According to Zhen, et al (2017), academic self-efficacy means an individual's beliefs about studying, doing research activities, asking questions in class, having a successful relationship with a teacher, establishing intimate relationships with classmates, having good academic performance, and participating in discussions. It is a class. Therefore, it has both cognitive and motivational components. As a result, it can be expected that academic self-efficacy is a good mediator between time perspective and intelligence beliefs with self-disability in students and IQ beliefs with self-disability with mediation of academic self-efficacy have a significant and negative effect on self-disability.

Every research is faced with limitations during implementation and one of the important limitations of this research is the dispersion of the research community, the use of self-report tools, the limitation of the research community to high school students in Tehran and the lack of results by gender. Therefore, conducting research on junior high school students, elementary school students, and even students in other cities or students can have beneficial results. Another suggestion, considering the existence of gender differences in most of the educational and psychological characteristics, is that this research should be conducted separately on male and female students and the results should be compared. According to the results of the present study, planning to reduce students' disability based on time perspective, IQ beliefs and academic self-efficacy is essential. As a result, school counselors and psychologists can improve their time perspective, IQ beliefs, and academic self-efficacy through workshops.

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